MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

MVR 2043 – SIMULATION SCRIPTING

(All sections / Groups)

08 MARCH 2018
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 5 pages with 15 objective questions and 13 subjective questions only.

2. Answer **ALL** questions in section **A** and **C**. Answer **SEVEN** out of **TEN** questions in section **B**. All questions carry equal marks and the distribution of the marks for each question is given.

3. Please write all your answers in the Answer Booklet provided.

Section A: Objective Questions

(Total: 15 Marks)

1. Which one of these can be properly summarized as the **purpose** of Simulation?
   A. to enable real life games to be made as real looking as possible
   B. to allow the analysis of a system's capabilities, capacities, and behaviors without requiring the construction of or experimentation with the real system
   C. to allow entering a virtual environment to visualize life in an alternate reality
   D. to enable the creation of artificial intelligence

2. Which function is called for each object in the scene at the time when the scene **start**?
   A. void Starting() {.. }
   B. void Start() {.. }
   C. void start() {.. }
   D. void starts() {.. }

3. _____ are a common concept to all 3D applications, as they provide the means to set the visual appearance of a 3D model. From basic colors to reflective image-based surfaces?
   A. Physics
   B. Navigation
   C. Materials
   D. Audio

4. In Unity 3D to **hide** an object you have to use following code?
   A. transform.SetActive(true);
   B. object.transform.SetActive = 1
   C. object.transform.SetActive(false);
   D. object.transform.SetActive = 0

5. Selecting the **root node** allows us to establish correspondence between _____ clips for generic model?
   A. Animation
   B. Audio
   C. Component
   D. Video

Continued .....

6. A **Mesh Renderer** must be presented in order to draw surfaces onto the mesh of a 3D object. It is also in charge of the following?
   A. How the mesh responds to lighting
   B. Materials used on the surface to show color or textures
   C. Both
   D. None of the above

7. Using the following, you able to **change parent** of GameObject?
   A. hudCamera.transform.parent = hudSelectedObject.transform;
   B. hudCamera.transform.SettingParent(hudSelectedObject.transform);
   C. Both
   D. None of the above

8. How can a method be **invoked** in 5 seconds?
   A. Invoke(myMethod, 5000);
   B. Call(myMethod, 5000);
   C. Invoke(myMethod, 5);
   D. Call(myMethod, 5);

9. Which one of the following is **valid** Generic Function Definition in UnityScript?
   A. T FuncName<T>();
   B. function FuncName<T>(): T;
   C. function FuncName.<T>(): T;
   D. void FuncName<T>();

10. What are the regular **update** events?
    A. Update, FixedUpdate, TimeFramedUpdate, LateUpdate
    B. Update, FixedUpdate, LateUpdate
    C. FixedUpdate, TimeFramedUpdate, LateUpdate
    D. Update, FixedUpdate, TimeFramedUpdate

11. A Rigidbody is the main component that enables physical behaviour for a ___. With a Rigidbody attached, the object will immediately respond to gravity?
    A. ClassObject
    B. GameObject
    C. Collider Component
    D. Physics

Continued .....

12. 'Float currentSpeed;' is written in the script. What is the argument to check if the currentSpeed is more than 0?
    A. Debug.Log(currentSpeed);
    B. If (currentSpeed >= 0)
    C. void CheckCurrentSpeed(){}
    D. if (currentSpeed > 0.0f)

13. What is the use of the **Network Transform** component in regards of a multiplayer application?
    A. To provide an interface in the editor to control the configuration of the network
    B. To control an object's network identity and make the networking system aware
    C. To sync multiplayer GameObject's transform across the network
    D. To sync the position of a child object of an object with a NetworkTransform component

14. **State Synchronization** is required to synchronize variables across a network. Which one of these attributes is the **CORRECT** way to attribute a network synchronized variables?
    A. [SyncVars]
    B. [VarSync]
    C. [Sync Var]
    D. [SyncVar]

15. Which one of the followings is **NOT** example use case of Texture Array?
    A. When texture atlas is fully packed
    B. Split to more texture atlas
    C. Divide texture into half size
    D. More materials -> more draw calls

Continued .....

Section B: Subjective Questions

Answer any 7 (SEVEN) questions ONLY. **(Total: 14 Marks)**

1. What is the difference between **marker** and **markerless** AR tracking? (2 Marks)

2. Explain the procedure on how to make AR app with **Vuforia** and **Unity**? (2 Marks)

3. Explain the difference between a **Collider** and a **Trigger**? (2 Marks)

4. Define what is **SLAM** technology? (2 Marks)

5. Define what is **Object Pooling**? (2 Marks)

6. Explain the advantage of **Occlusion Culling**? (2 Marks)

7. Mention what is the function of **Inspector** in Unity 3D? (2 Marks)

8. Explain the purpose of avoid **garbage allocation**? (2 Marks)

9. List down **4 (FOUR)** Augmented Reality **SDK** for AR development? (2 Marks)

10. Explain how **texture array** can be useful? (2 Marks)

Section C: Subjective Questions
Answer all questions. **(Total: 11 Marks)**

1. Write down the script of **Instantiating** a Prefab. (2 Marks)

2. Explain the purpose for these functions in Unity: (4 Marks)
   a. Using UnityEngine.UI;
   b. isKinematic - in Rigidbody
   c. GameObject go = GameObject.Find("SomeGuy");
   d. transform.Find("Hand").GetComponent<OtherScript>().DoSomething();

3. Write the required **function** that does the following: (5 Marks)
   a. Change a GameObject's color after 2 seconds
   b. Create a Player Health that is synchronized through network
   c. Change a face recognition mask GameObject if player press the button

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